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282475

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**INFORMATION DISCLOSURE STATEMENT  
BY APPLICANT**

Applicant: **MANABE et al.**

**Cont of Appln. No. 09/677,781 filed Oct. 2, 2000**

Filing Date: Herewith

Date: January 23, 2002

Page **1** of **6**

Examiner: S. Mulpuri

Group Art Unit: 2812

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SM	AR	5,278,433	11/1994	Manabe et al.			
	BR	4,844,989	07/89	Murdock			
	CR	4,408,217	10/83	Kobayashi			
	DR	4,268,842	05/81	Jacob et al.			
	ER	5,005,057	04/91	Izumiya et al.			
	FR	4,614,961	09/86	Khan et al.			
	GR	4,153,905	05/79	Charmakedze et al.			
	HR	4,855,249	08/89	Akasaki et al.			
	IR	4,911,102	03/90	Manabe et al.			
	JR	4,945,548	08/90	Kotaki et al.			
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	LR	5,006,908	04/91	Natsuoka et al.			
	MR	4,608,581	08/86	Bagratishvili et al.			
SM	NR	4,473,938	10/84	Kobayashi et al.			

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								Enclosed	No	Enclose	No
SM	OR	2-229475	09/1990	Japan					X		X
	PR	2-275682	11/1990	Japan					X		X
	QR	5-042785	04/1975	Japan					X		X
	RR	59-228776	12/1994	Japan					X		X
	SR	0 620 203 A1	10/1994	Europe	Nakahata				X		X
	TR	0-277597	08/1988	EPA					X		X
	UR	03-034549	02/1991	Japan	Toyoda				X		X
	VR	34549	02/1991	Japan	Hatano				X		X
SM	WR	4,006,449	09/1990	Germany	Manabe				X		X
	XR	57-018377	01/1982	Japan	KOBAYASHI				X		X

**OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)**

SM	YR	English Abstract of OKI Japanese Application Published 9/22/82 under No. 57-153479.									
	ZR	I. Akasaki et al., "Effects of AlN Buffer Layer on Crystallographic Structure... by MOVPE", J. Crystal Growth 98 (1989) pp. 209-19.									
	AAR	Liu et al., "Growth morphology and surface-acoustic-wave measurements of AlN films on Sapphire," Journal of Applied Physics, Vol. 46, No. 9, September 1975, pages 3703-3706.									
SM	BBR	Ilegems et al. "Electrical properties of n-Type Vapor-growth Gallium Nitride", J. Phys. Chem. solids., 1973, Vol. 34, pp. 885-895.									

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Page 2 of 6

Examiner: S. Mulpuri

Group Art Unit: 2812

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	BR 5,247,533	09/1993	Okazaki et al.			
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	DR 5,079,184	01/1992	Hatano et al.			
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							Enclosed	No	Enclose	No
Sum	LR 58-012381	01/1983	Japan	Yoneda				x		x
	MR 61-007671	01/1986	Japan	Kawabata				x		x
	NR 57-087184	05/1982	Japan	Tabuchi				x		x
	OR 57-153479	09/1982	Japan	Ooki				x		x
	PR 2-738329	03/1978	Germany	Jacob et al.				x		x
	QR 56-59699	05/1981	Japan	Ooki				x		x
	RR 34549	02/1991	Japan	Hatano				x		x
Sum	SR 3-046018	09/1981	Germany	Kobayashi et al.				x		x

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Sum	TR	Koide et al. "Effect of an AlN Buffer layer on AlGaNa-A1203 Heteroepitaxial Growth by MOVPE", Japanese Journal of Crystal Growth 1986, Vol. 13, No. 4, pp. 218-225.								
	UR	Sayyah et al. "The Influence of TMA and SiH4 on the Incorporation Rate of GaInAlxGa1-xN Crystals Grown from TMG and NH3", Journal of Crystal Growth 77 (1986), pp. 424-429 North-Holland, Amsterdam.								
	VR	Bottka, et al., Silicon and beryllium doping of OMVPE Grown..., Journal of Crystal Growth 68 (1984) pp. 54-59, North-Holland Amsterdam								
	WR	Madar et al., "Growth Anisotropy in the CaN/Al2O3 System," Journal of Crystal Growth 40, 1997, pages 239-252.								
	XR	Koide et al., "Epitaxial Growth and Properties of AlxGa1-xN by MOVPE, Reprinted from Journal of the Electrochemical Society, Vol. 133, No. 9, September 1996, pp. 1956-1960								
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F00-219-US-DIV-  
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Applicant: **MANABE et al.**

Cont of Appln. No.: **09/677,681 filed Oct 2, 2000**

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Date: January 23, 2002

Page

3

of

6

Examiner: S. Mulpuri

Group Art Unit: 2812

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	LR	2623466	2/1990	Japan	Sassa et al.				x		x
	MR	59-228776	6/1983	Japan	Maefutsu et al.				x		x
	NR	60-173829	2/1984	Japan	Maefutsu et al.				x		x
	OR	1-589351	05/1981	England							
	PR	63-188977	08/1988	Japan							
	QR	62-119196	05/1987	Japan							
	RR	57-046669	10/1982	Japan							
	SR	03-034549	02/1991	Japan							
Gr	TR	54-071589	06/1979	Japan	Toyoda						

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

Gr	UR	English Abstract of OOKI Japanese Application Published 9/19/82 under No. 57-153479.							
	VR	I. Akusuki et al., "Effects of AlN Buffer Layer on Crystallographic Structure... by MOVPE", J. Crystal Growth 98 (1989) pp. 209-19.							
	WR	Sayyah, A Study of Growth Mechanisms and Electrical and Optical Properties of Epitaxial Al <sub>x</sub> Ga <sub>1-x</sub> N Layers Grown by Atmospheric Pressure Metalorganic Chemical Vapor Deposition, A Dissertation presented to Faculty of the Graduate School, University of Southern California, February 1986, pp. 125-136.							
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BY APPLICANT**

Applicant: MANABE et al.

Cont. of USSN 09/677,781 filed Oct 2, 2000

Filing Date: Herewith

Date: January 23, 2002

Page

4

of

6

Examiner: S. Mulpuri

Group Art Unit: 2812

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SM	LR	58-046686	03/1983	Japan	Yoneda			X		X
	MR	54-071590	06/1979	Japan	Toyoda			X		X
	NR	02-081482	03/1990	Japan	Manabe			X		X
	OR	02-081483	03/1990	Japan	Manabe			X		X
SM	PR	02-081484	03/1990	Japan	Manabe			X		X
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	SR	Kiyoshi Takahashi, Semiconductor Engineering: Basic Characteristics of Semiconductor, Morikita Electric Engineering Series, Vol. 4, Chapter 14: Semiconductor Material Technics, 14.1: Forming of Semiconductor Material, August 1, 1975, p. 297.								
	TR	Hiroyuki Matsunami, Semiconductor Engineering, Chapter 2: Basic Characteristics of Semiconductor, March 25, 1983, pp. 18-31.								
	UR	Sano et al., Properties of III-V Nitride Semiconductors, Japanese Journal of Applied Physics, Vol. 52, No. 5, 1983, pp. 374-387.								
	VR	Miyoshi Haradome, Basics of Semiconductor Engineering, Chapter 8: Compound Semiconductor, 8.1, Conditions to be Semiconductor, August 30, 1967, p. 161.								
SM	WR	A.S. Grove, Physics and Technology of Semiconductor, Chapter 4: Basics of Semiconductor Physics, 1967, translated and published in Japan June 23, 1995, pp. 112-123.								

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**Cont of Appln. No.: 09/677,781 filed Oct. 2, 2000**

Filing Date: Herewith

Date: January 23, 2002

Page

5

of

6

Examiner: S. Mulpuri

Group Art Unit: 2812

**U.S. PATENT DOCUMENTS**

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	JR										
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	VR	Pankove et al., Optical Absorption of GaN, Applied Physics Letters, Vol. 17, No. 5, September 1970, pp. 197-198.
	WR	Amano et al., Effects of the Buffer Layer in Metalorganic Vapour Phase Epitaxy of GaN on Sapphire Substrate, Thin Solid Films, 163, (1988), pp. 415-420.
	XR	Akasaki et al., Effects of AlN Buffer Layer on Crystallographic Structure and on Electrical and Optical Properties of GaN and Ga <sub>1-x</sub> Al <sub>x</sub> N (0 < x < 0.4) Films Grown on Sapphire Substrate by MOVPE, Journal of Crystal Growth 98 (1989), pp. 209-219.
	YR	Bottka et al., Silicon and Beryllium Doping of OMVPE Grown Al <sub>x</sub> Ga <sub>1-x</sub> As (x = 0-0.3) Using Silane and Diethylberyllium, Journal of Crystal Growth 68 (1984) pp. 54-59.
	AAR	Hiramatsu et al. "Effects of Buffer Layer in MOVPE Growth of GaN Film on Sapphire Substrate" Japanese Journal of Crystal Growth, 1998, Vol. 15, No. 3&4, pp. 334-342
	BBR	Elwell et al. "Crystal Growth of Gallium Nitride" Prog. Crystal Growth and Charact. 1988, vol. 17, pp. 53-78.
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Sum	DDR	
	EER	

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Page 6 of 6

Examiner: S. Mulpuri

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SM	JR	59-228776	12/1984	Japan	Maefutsu et al.		X	FULL	
SM	KR	56-080183	07/1981	Japan	Kobayashi et al.	X			X
	LR								
	MR								
	NR								
	OR								
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SM	RR	Amano, <i>The Research on MOVPE Growth and Application to Photoelectric Physical Property of GaN and a Device Emitting Blue-Color Lights</i> , Doctoral Dissertation of Nagoya University, Chapter 7,8 (pages 80-94), January 13, 1989					X	Partial	
	SR	Jacob et al., <i>Efficient Injection Mechanism for Electroluminescence in GaN</i> , Applied Physics Letter, Vol. 30, No. 8, pp. 412-414, April 15, 1977							
	TR	Tietjen et al., <i>Vapor Phase Growth Technique and System for Several III-V Compound Semiconductors</i> , RCA Laboratories, 5 pages, March 1969					X	Partial	
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	VR	Wang, <i>Photoluminescence and Stimulated Emission from GaN</i> , Dissertation for University of Southern California, pages 1-158, November 1978							
SM	WR	Sayyah, <i>A Study of Growth Mechanisms and Electrical and Optical Properties of Epitaxial Al<sub>x</sub>Ga<sub>1-x</sub>N layers Grown by Atmospheric Pressure Metalorganic Chemical Vapor Deposition</i> , Dissertation for University of Southern California, pp. 1-176, February 1986							

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